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DECLARATION UNDER 37 CFR 1.132  
Application No. 09/970,389

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## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Donald J. Merkley et al.  
Application No.: 09/970,389  
Filing Date: October 2, 2001  
Group Art Unit: 1791  
Examiner: Mark Halpern  
Confirmation No.: 9683  
For: Method and Apparatus for Reducing Impurities in  
Cellulose Fibers for Manufacture of Fiber Reinforced  
Cement Composite Materials

VIA EFS  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

## DECLARATION UNDER 37 C.F.R. § 1.132

I, Professor Prof. Dr.-Ing. Edmone Roffael, declare that:

1. I studied at the University of Alexandria and Kairo as well as the Technical University Darmstadt (TH Darmstadt), Germany and received my PhD (Dr.-Ing.) in 1968; my dissertation was on the topic of cellulose chemistry. In 1976, I received a D. Sci. degree in wood chemistry. I worked at the Fraunhofer Institute for Wood Research in Braunschweig for twenty three years and then further in the field of wood, fibre and pulp chemistry at the University of Göttingen. I became a Professor at the University of Göttingen in 1981, and was head of the department of wood chemistry from 1993 on. I have authored more than 350 scientific publications in the area of cellulose and paper chemistry and wood science and am a named inventor on several patents, many of which are related to the use of cellulose fibres in a cement composite.

2. I have read U.S. Application No. 09/970,389 filed October 2, 2001 (hereinafter, "the '389 Application").
3. I have been asked to give my opinion about Japanese Publication No. JP 11-010631 (hereinafter, "Yamada"), including paragraphs [0005] and [0007]. It is my opinion that the method described in Yamada, including paragraphs [0005] and [0007], cannot be used to measure the COD of lignocellulose fibres. This is because a skilled person knows that Yamada does not practice any conventionally known method or standard for extraction of COD from a fibre suspension. Methods and standards for measuring COD of cellulose fibres from a fibre suspension are well-known in the pertinent literature.
4. I did not find any detailed and exact description of how the COD was determined in Yamada that would enable a skilled person to repeat the measurements made in Yamada. In conclusion, I consider the method of Yamada inappropriate for the measurement of COD of cellulose fibres.
5. It is well-known by a skilled person that in making cement bonded products using cement as a binder for cellulosic materials, extensive chemical interactions between cement and lignocellulosics (e.g., cellulose fibres) take place leading to the formation of low-molecular degradation compounds with a chemical oxygen demand (COD). The amount of degradation compounds and COD produced depends on the chemical composition of the pulp as well as the chemical nature of the cement that is used, especially its alkalinity. None of these factors are known in Yamada. The low molecular chemical compounds produced after chemical interactions with cement and lignocellulosics is different than the COD content associated with the fibres themselves. And while COD compounds will accumulate in waste water that is being continuously recycled in a cement making process, it will not be recorded in any understandable way in a filtrate extracted from a cement slurry after a 5 minute mixing, as is performed in paragraphs [0005] and [0007] of Yamada.

6. In summary, the filtrate extraction from a cement mixture as disclosed by Yamada cannot be compared with an extraction method conventionally used for measuring COD of lignocellulose fibers. Accordingly, it is not true at all that a cement mixture having a COD of 5 ppm may be used to identify a COD value for cellulose fibers. Yamada, including paragraphs [0005] and [0007], cannot be relied on or used in support of common extraction conditions for measuring COD of lignocellulose fibres.
7. I do not believe that Yamada anticipates or is obvious over the claims presented in the '389 Application.
8. Unlike Yamada, the '389 Application teaches a suitable and reliable method for measuring COD of lignocellulose fibers from a fiber suspension.
9. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Ed. Roffael  
Prof. Dr.-Ing. Edmond Roffael

24.02.2009  
Date